REMARKS

Reconsideration of this application is respectfully requested in view of the foregoing amendments and the following remarks.

The Applicants appreciate the acknowledgement of allowable subject matter in claims 2, 6 and 10.

By the foregoing amendment, claims 1, 2, 5, 6, 9 and 10 have been amended, and claims 13-18 have been added. No new matter has been added by this Amendment. Thus, claims 1-18 are pending in this application and subject to examination.

In the Office Action mailed June 19, 2006, claims 1, 3-5, 7-9 and 11-12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,427,439 to Xu et al. (hereinafter "Xu"). Also, claims 1, 3-5, 7-9 and 11-12 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,755,014 to Kawai et al. (hereinafter "Kawai"). It is noted that claims 1, 2, 5, 6, 9 and 10 have been amended. To the extent that the rejections remain applicable to the claims currently pending, the Applicant hereby traverses the rejections, as follows.

Independent claim 1 is directed to an exhaust gas purifying apparatus for an internal combustion engine. Claim 1 includes, among other features and advantages, exhaust gas volume detecting means for detecting an exhaust gas volume of said internal combustion engine; basic supply amount determining means for determining a basic supply amount of the reducing agent to said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; estimated value calculating means for calculating an estimated value of a detected value detected by said NOx detector on

Application No. 10/743,870
Attorney Docket No. 108419-00055

TECH/452713.1

the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and supply amount determining means for determining an amount of the reducing agent supplied to said NOx selective reduction catalyst by said reducing agent supply unit by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value.

Independent claim 5 is directed to an exhaust gas purifying method for an internal combustion engine, which includes, among other features, the steps of detecting an exhaust gas volume of said internal combustion engine; determining a basic supply amount of the reducing agent to said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; calculating an estimated value of a detected value detected by said NOx detector on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and determining the amount of the reducing agent supplied to said NOx selective reduction catalyst by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value.

Independent claim 9 is directed to an engine control unit including a control program for causing a computer to execute an exhaust gas purifying method for an internal combustion engine. Among other features and advantages, the engine control unit of claim 9 includes features wherein the control program causes the computer to instruct exhaust gas volume detecting means to detect an exhaust gas volume of said internal combustion engine; determine a basic supply amount of the reducing agent to

Application No. 10/743,870
Attorney Docket No. 108419-00055

TECH/452713.1

said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; instruct estimated value calculating means to calculate an estimated value of a detected value detected by said NOx sensor on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and determine the amount of the reducing agent supplied to said NOx selective reduction catalyst by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value.

Thus, in each of independent claims 1, 5 and 9, an estimated value of the detected value of the NOx detector is calculated on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting a basic supply amount of the reducing agent to the NOx selective reduction catalyst, and the correction coefficient is determined on the basis of the model such that the estimated value reaches an extreme value. Therefore, the supply amount of the reducing agent concentration and NOx concentration in exhaust gases at a location downstream of the NOx selective reduction catalyst present low values in a well balanced state.

The Applicant submits that neither Xu nor Kawai teaches or suggests at least the combination of exhaust gas volume detecting means for detecting an exhaust gas volume of said internal combustion engine; basic supply amount determining means for determining a basic supply amount of the reducing agent to said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; estimated value calculating means for calculating an estimated value of a detected value detected by

Application No. 10/743,870
Attorney Docket No. 108419-00055

said NOx detector on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and supply amount determining means for determining an amount of the reducing agent supplied to said NOx selective reduction catalyst by said reducing agent supply unit by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value, as recited in claim 1, as amended.

In addition, the Applicant submits that neither Xu nor Kawai teaches or suggests at least the combination of detecting an exhaust gas volume of said internal combustion engine; determining a basic supply amount of the reducing agent to said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; calculating an estimated value of a detected value detected by said NOx detector on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and determining the amount of the reducing agent supplied to said NOx selective reduction catalyst by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value, as recited in claim 5, as amended.

Similarly, the Applicant submits that neither Xu nor Kawai teaches or suggests at least the combination of the control program causing the computer to instruct exhaust gas volume detecting means to detect an exhaust gas volume of said internal combustion engine; determine a basic supply amount of the reducing agent to said NOx selective reduction catalyst in accordance with the detected exhaust gas volume; instruct estimated value calculating means to calculate an estimated value of a detected

TECH/452713.1

value detected by said NOx sensor on the basis of a model indicative of a relationship between the estimated value and a correction coefficient for correcting the basic supply amount of the reducing agent; and determine the amount of the reducing agent supplied to said NOx selective reduction catalyst by determining the correction coefficient on the basis of said model such that the estimated value reaches an extreme value, as recited in claim 9, as amended.

For at least these reasons, the Applicant submits that independent claims 1, 5 and 9 are allowable of the applied art of record. As claims 1, 5 and 9 are allowable, the Applicant submits that claims 2-4, 6-8 and 10-12, which depend from allowable claims 1, 5 and 9, respectively, are likewise allowable for at least the reasons set forth above with respect to claims 1, 5 and 9.

In addition, new claims 13-14, 15-16 and 17-18 depend from allowable 9, 1 and 5, respectively. As such, new claims 13-14, 15-16 and 17-18 are allowable for at least the reasons set forth above with respect to claims 1, 5 and 9.

Conclusion

For all of the above reasons, it is respectfully submitted that the claims now pending patentably distinguish the present invention from the cited references. Accordingly, reconsideration and withdrawal of the outstanding rejections and an issuance of a Notice of Allowance are earnestly solicited.

Should the Examiner determine that any further action is necessary to place this application into better form, the Examiner is encouraged to telephone Applicant's undersigned representative at the number listed below.

In the event this paper is not considered to be timely filed, the Applicant

hereby petitions for an appropriate extension of time. The Commissioner is hereby

authorized to charge any fee deficiency or credit any overpayment associated with

this communication to Deposit Account No. 01-2300, referring to client-matter

number 108419-00055.

Respectfully submitted,

Michele L. Connell
Registration No. 52,763

Customer No. 004372
ARENT FOX PLLC
1050 Connecticut Avenue, N.W., Suite 400
Washington, D.C. 20036-5339
Tel: (202) 715-8469
Fax: (202) 638-4810

MLC:ksm

- 14 -

Application No. 10/743,870
Attorney Docket No. 108419-00055